



22000040101.ST25  
SEQUENCE LISTING

<110> Kool, Eric T.

<120> COMPOSITIONS AND METHODS FOR NONENZYMATIC LIGATION OF OLIGONUCLEOTIDES AND  
DETECTION OF GENETIC POLYMORPHISMS

<130> 220.00040101

<140> US 09/483,337

<141> 2000-01-14

<150> US 60/116,059

<151> 1999-01-15

<160> 40

<170> PatentIn version 3.0

<210> 1

<211> 28

<212> DNA

<213> Artificial

<220>

<223> autoligating hairpin

<220>

<221> misc\_feature

<222> (1)..(1)

<223> 5'-deoxy-5'-iodothymidine

<220>

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<221> misc\_feature

<222> (28)..(28)

<223> deoxyadenosine with a phosphorothioate group on its  
3' hydroxyl group

<400> 1

nccagcgtag tttgtacgc tggatgcn

28

<210> 2

<211> 28

<212> DNA

<213> Artificial

<220>

<223> hairpin

<400> 2

tccagcgtag tttgtacgc tggatgca

28

<210> 3

<211> 12

<212> DNA

<213> Artificial

<220>

<223> oligonucleotide

<220>

<221> misc\_feature

<222> (1)..(1)

<223> 5'-deoxy-5'-iodothymidine

<400> 3

ntcacgagcc tg

12

<210> 4

<211> 18

<212> DNA

<213> Artificial

<220>

<223> splint oligomer

<400> 4

ctagtccaaa gtgctcgg

18

<210> 5

<211> 20

<212> DNA

<213> Artificial

<220>

<223> oligonucleotide

<220>

<221> misc\_feature

<222> (1)..(1)

<223> deoxyguanosine which is radiolabeled with 32P at its 5' end

<220>

<221> misc\_feature

<222> (8)..(8)

<223> deoxythymidine with a phosphorothioate group on its 3' hydroxyl group

<400> 5

natcagntt cacgagcctg

20

<210> 6

<211> 20

<212> DNA

<213> Artificial

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<220>

<223> 20mer duplex carrying a sulfur linkage

<220>

<221> misc\_feature

<222> (8)..(8)

<223> deoxythymidine with a phosphorothioate group on its  
3' hydroxyl group

<400> 6  
gatcaggntt cacgagcctg

20

<210> 7

<211> 20

<212> DNA

<213> Artificial

<220>

<223> sense primer

<400> 7  
gtggggcagg agaccctgta

20

<210> 8

<211> 20

<212> DNA

<213> Artificial

<220>

<223> antisense primer

<400> 8  
ccctcctcta gaggaagcag

20

<210> 9

<211> 17

<212> DNA

<213> Artificial

<220>

<223> ligated oligonucleotide

<400> 9

gtgggcgccg tcggtgt

17

<210> 10

<211> 17

<212> DNA

<213> Artificial

<220>

<223> ligated oligonucleotide

<220>

<221> misc\_feature

<222> (10)..(10)

<223> deoxyguanosine with a phosphorothioate group on its 3' hydroxyl group

<400> 10

gtgggcgccn tcggtgt

17

<210> 11

<211> 17

<212> DNA

<213> Artificial

<220>

<223> ligated oligonucleotide

<220>

<221> misc\_feature

<222> (10)..(10)

<223> deoxyguanosine with a phosphoroselenoate group on its 3' hydroxyl group

<400> 11  
gtgggcgccn tcggtgt

17

<210> 12

<211> 12

<212> DNA

<213> Artificial

<220>

<223> ssDNA starting sequence

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<221> misc\_feature

<222> (1)..(1)

<223> 5'-deoxy-5'-iodothymidine

<400> 12  
ntcacgagcc tg

12

<210> 13

<211> 18

<212> DNA

<213> Artificial

<220>

<223> ssDNA template

<400> 13  
ggctcgtgaa acctgatc

18

<210> 14

<211> 20

<212> DNA

<213> Artificial

<220>

<223> product of ssDNA ligation

<220>

<221> misc\_feature

<222> (8)..(8)

<223> deoxythymidine with a phosphorothioate group on its  
3' hydroxyl group

<400> 14  
gatcaggntt cacgagcctg

20

<210> 15

<211> 28

<212> DNA

<213> Artificial

<220>

<223> duplex DNA starting sequence

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<221> misc\_feature

<222> (1)..(1)

<223> 5'-deoxy-5'-iodothymidine

<220>

<221> misc\_feature

<222> (28)..(28)

<223> deoxyadenosine with a phosphorothioate group on its  
3' hydroxyl group

<400> 15  
nccagcgtag ttttgtacgc tggatgcn

28

<210> 16

<211> 56

<212> DNA

<213> Artificial

<220>

<223> circular product of duplex DNA ligation

<220>

<221> misc\_feature

<222> (1)..(1)

<223> deoxythymidine with a 5'-bridging phosphothioester linking group where sulfur is in the 5'-bridging position

<220>

<221> misc\_feature

<222> (29)..(29)

<223> deoxythymidine with a 5'-bridging phosphothioester linking group where sulfur is in the 5'-bridging position

<400> 16

nccagcgtagc ttttgtacgc tggatgcanc cagcgtactt ttgtacgctg gatgca

56

<210> 17

<211> 20

<212> DNA

<213> Artificial

<220>

<223> splint oligomer

<400> 17

acggtccaaa acatattttg

20

<210> 18

<211> 30

<212> DNA

<213> Artificial

<220>



<223> one-pot ligation oligonucleotide

<220>

<221> misc\_feature

<222> (1)..(1)

<223> 5'-deoxy-5'-iodothymidine

<220>

<221> misc\_feature

<222> (30)..(30)

<223> deoxythymidine with a phosphorothioate group on its  
3' hydroxyl group

<400> 18  
ngatcacttc gtctcttcag caaatatgn

30

<210> 19

<211> 33

<212> DNA

<213> Artificial

<220>

<223> one-pot ligation oligonucleotide

<220>

<221> misc\_feature

<222> (1)..(1)

<223> 5'-deoxy-5'-iodothymidine

<220>

<221> misc\_feature

<222> (33)..(33)

<223> deoxythymidine with a phosphorothioate group on its  
3' hydroxyl group

<400> 19

22000040101.ST25  
nttgaccgt tggtttcgac ttgtcagagg acn 33

<210> 20  
<211> 18  
<212> DNA  
<213> Artificial

<220>  
<223> splint oligonucleotide  
<400> 20  
agtgatcaag tcctctga 18

<210> 21  
<211> 63  
<212> DNA  
<213> Artificial

<220>  
<223> circular product of one-pot ligation  
<220>  
<221> misc\_feature  
<222> (1)..(1)  
<223> deoxythymidine with a 5'-bridging phosphothioester linking  
group where sulfur is in the 5'-bridging position

<220>  
<221> misc\_feature  
<222> (34)..(34)  
<223> deoxythymidine with a 5'-bridging phosphothioester linking  
group where sulfur is in the 5'-bridging position

<400> 21  
nttgaccgt tggtttcgac ttgtcagagg actngatcac ttcgtctctt cagcaaaata 60  
tgt 63

<210> 22

<211> 17

<212> DNA

<213> Artificial

<220>

<223> 18mer complementary strand

<400> 22

taatacgact cactata

17

<210> 23

<211> 45

<212> DNA

<213> Artificial

<220>

<223> template for replication/transcription

<220>

<221> misc\_feature

<222> (9)..(9)

<223> deoxythymidine with a 5'-bridging phosphothioester linking group where sulfur is in the 5'-bridging position

<400> 23

gacaggtnt cacgagcctt atccgtccta tagtgagtcg tatta

45

<210> 24

<211> 58

<212> DNA

<213> Artificial

<220>

<223> 5'-bridging phosphorothioate duplex DNA

<220>

<221> misc\_feature

<222> (1)..(1)

<223> deoxythymidine with a 5'-bridging phosphorothioate linking group where sulfur is in the 5'-bridging position

<220>

<221> misc\_feature

<222> (31)..(31)

<223> deoxythymidine with a 5'-bridging phosphorothioate linking group where sulfur is in the 5'-bridging position

<400> 24

nccagcgtat cttttgatac gctggatgca nccagcgtac ttttgtacgc tggatgca 58

<210> 25

<211> 58

<212> DNA

<213> Artificial

<220>

<223> all phosphodiester DNA

<400> 25

tccagcgtat cttttgatac gctggatgca tccagcgtac ttttgtacgc tggatgca 58

<210> 26

<211> 10

<212> DNA

<213> Artificial

<220>

<223> linear autoligation probe

<220>

<221> misc\_feature

<222> (10)..(10)

<223> deoxyguanosine with a phosphorothioate group on its

3' hydroxyl group

22000040101.ST25

<400> 26  
gtgggcgccn 10

<210> 27

<211> 28

<212> DNA

<213> Artificial

<220>

<223> MUT target

<400> 27  
cttaccaca ccgacggagc ccaccacc 28

<210> 28

<211> 28

<212> DNA

<213> Artificial

<220>

<223> 5'MM target

<400> 28  
cttaccaca ccgccggagc ccaccacc 28

<210> 29

<211> 28

<212> DNA

<213> Artificial

<220>

<223> 3'MM target

<400> 29  
cttaccaca ccgaaggagc ccaccacc 28

<210> 30

<211> 28

<212> DNA

<213> Artificial

<220>

<223> MMM target

<400> 30

cttaccaca cggacggagc ccaccacc

28

<210> 31

<211> 48

<212> DNA

<213> Artificial

<220>

<223> cyclization probe

<220>

<221> misc\_feature

<222> (1)..(1)

<223> 5'-deoxy-5'-iodothymidine

<220>

<221> misc\_feature

<222> (48)..(48)

<223> deoxyguanosine with a phosphorothioate group on its  
3' hydroxyl group

<400> 31

ncggtgtggg ttttcactga atatcacgat tacattttgt gggcgccn

48

<210> 32

<211> 28

<212> DNA

<213> Artificial

<220>

<223> MMM target

<400> 32

cttaccctaaa ccgacggagc ccaccacc

28

<210> 33

<211> 28

<212> DNA

<213> Artificial

<220>

<223> MUT target

<400> 33

cttgaaaacc cacaccgacg gcgcatca

28

<210> 34

<211> 28

<212> DNA

<213> Artificial

<220>

<223> 3'MM target

<400> 34

cttgaaaacc cacaccgaag gcgcatca

28

<210> 35

<211> 28

<212> DNA

<213> Artificial

<220>

<223> MMM target

<400> 35

cttgaaaacc cacaccgacg tcgcatca

28

<210> 36

<211> 13

<212> DNA

<213> Artificial

<220>

<223> linear probe

<220>

<221> misc\_feature

<222> (1)..(1)

<223> 5'-deoxy-5'-iodothymidine

<400> 36  
ngtgggcaag agt

13

<210> 37

<211> 50

<212> DNA

<213> Artificial

<220>

<223> wild-type target

<400> 37  
gtcagcgcac tcttgccac accgccggcg cccaccacca ccagcttata

50

<210> 38

<211> 50

<212> DNA

<213> Artificial

<220>

<223> mutant H-ras target

<400> 38



22000040101.ST25  
gtcagcgcac tcttgcccac accgacggcg cccaccacca ccagcttata

50

<210> 39

<211> 13

<212> DNA

<213> Artificial

<220>

<223> universal probe

<220>

<221> misc\_feature

<222> (1)..(1)

<223> 5'deoxy-5'-iodothymidine

<220>

<221> misc\_feature

<222> (3)..(3)

<223> fluorescein-dT

<400> 39  
ngngggcaag agt

13

<210> 40

<211> 28

<212> RNA

<213> Artificial

<220>

<223> H-ras oncogene target

<400> 40  
gcgcacucuu gcccacaccg acggcgcc

28